COVID-19 Vaccine Summary Chart

Find the following information in this quick reference for pharmacy:

- Quick links and guidance
- Dosing and administration
- Storage
- Dose preparation
- Efficacy and safety information
- Clinical considerations
- Special populations
- Ingredients

Quick Links

- CDC: Frequently Asked Questions about COVID-19 Vaccination
- CDC: Understanding and Explaining Viral Vector COVID-19 Vaccines
- FDA: COVID-19 Vaccines
- CDC: V-safe After Vaccination Health Checker
- CDC: VaxText℠ COVID-19 Vaccination Second-Dose Reminder
- USP: COVID-19 Vaccine Handling: Operational Considerations for Healthcare Practitioners

Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
EUA	Issued December 11, 2020	Issued December 18, 2020	Issued February 27, 2021
Fact sheet	• Health care providers • Recipients/caregivers	• Health care providers • Recipients/caregivers	• Health care providers • Recipients/caregivers
ACIP	Interim recommendation for use: Persons aged **≥12 years** for prevention of COVID-19	Interim recommendation for use: Persons aged **≥18 years** for prevention of COVID-19	Interim recommendation for use: Persons aged **≥18 years** for prevention of COVID-19
CDC resources	Pfizer-BioNTech COVID-19 Vaccine	Moderna COVID-19 Vaccine	Janssen COVID-19 Vaccine
CDC clinical considerations	Interim Clinical Considerations		

Continues.

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Dosing and Administration			
Vaccine type	mRNA		Viral Vector
Administer	Intramuscular (I.M.)		
Dose	30 mcg (**0.3 mL each**)	100 mcg (**0.5 mL each**)	$5x10^{10}$ viral particles (**0.5 mL each**)
Doses per vial	6	10-11 dose vial or 13-15 dose vial	5
Schedule	Two-dose series	Two-dose series	Single dose
Recommended interval	21 days from first dose	28 days from first dose	N/A
Earliest interval	17 days from first dose	24 days from first dose	N/A
Latest interval	42 days from first dose		N/A
Administration Errors	Refer to CDC's COVID-19 Vaccine Administration Errors of Deviations guide for information about how to handle these situations.		

Continues.

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Storage*			
How product arrives	Frozen liquid. No preservative.		Liquid suspension. No preservative.
Long-term storage	Ultra-low freezing until expiry date OR store frozen between -25°C to -15°C (-13°F to 5°F) for up to 2 weeks	Store frozen between -50°C to -15°C (-58°F to 5°F) until expiry date	Refrigerate until expiry date
Thawing	Thaw in refrigerator for at least 2–3 hours or at room temperature; must be at room temperature for at least 30 mins before dilution; do NOT refreeze	Thaw in refrigerator for at least 2–3 hours or at room temperature; must be at room temperature for at least 30 mins before administration; do NOT refreeze	Product is stored frozen by manufacturer until shipped at refrigerated temperatures; If vaccine is still frozen upon receipt, thaw at refrigerated temperature or if immediate use is required, thaw at room temperature; do NOT refreeze
Max time refrigerated unpunctured	30 days	30 days	Until expiry date
Max time at room temperature unpunctured	2 hours	24 hours	12 hours

*Temperature Key:

- Ultra-low Frozen Temperature: -80°C to -60°C (-112°F to 76°F)
- Pfizer-BioNTech Frozen Temperature: -25°C to -15°C (-13°F to 5°F)
- Moderna Frozen Temperature: -50°C to -15°C (-58°F to 5°F)
- Refrigerated Temperature: 2°C to 8°C (36°F to 46°F)
- Room Temperature: 9°C to 25°C (47°F to 77°F)

Continues.

COVID-19 Vaccine Summary Chart

Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Dose Preparation			
Dilution	Dilute with 1.8 mL of 0.9% sodium chloride (normal saline, preservative free).	Not diluted.	
Coloring	Off-white suspension		Colorless to slightly yellow, clear very opalescent suspension
Handling	Do NOT shake; **invert only**	Do NOT shake; **swirl before drawing up dose**	
Max time refrigerated after first punctured	6 hours after dilution	12 hours	6 hours
Max time at room temperature after first punctured	6 hours after dilution	12 hours	**2 hours**
Efficacy and Safety Information			
Publications	Dagan, et al. *NEJM*. Feb 24, 2021 Polack, et al. *NEJM*. Dec 31, 2020 Walsh, et al. *NEJM*. Dec 17, 2020	Baden, et al. *NEJM*. Feb 4, 2021 Anderson, et al. *NEJM*. Dec 17, 2020 Jackson, et al. *NEJM*. Nov 12, 2020	Sadoff, et al. *NEJM*. Jan 13, 2021
Overall efficacy; prevention of COVID-19 infection	**95%** beginning 7 days after second dose: primary analysis of Phase III trial data in 43,538 volunteers	**94%** beginning 14 days after second dose: primary analysis of Phase III trial data in >30,000 volunteers	**67%** beginning 14 days after single dose: primary analysis of Phase III trial data in >40,000 volunteers
Prevention of severe COVID-19 infection	**89%**	**100%**	**85%**
Prevention of asymptomatic COVID-19 infection	Under evaluation	Limited data suggest some degree of prevention	Data suggest a 60% reduction in asymptomatic infection from 29 days after dose

Continues.

COVID-19 Vaccine Summary Chart

Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Efficacy and Safety Information *(continued)*			
Study demographics	Diversity of volunteers: 81.9% White; 26.2% Hispanic/Latino; 9.8% African American; 4.4% Asian; <3% other races/ethnicities Age and sex distribution: 50.6% male; 49.4% female; 21.4% 65 years and older	Diversity of volunteers: 79.4% White; 20% Hispanic/Latino; 9.7% African American; 4.7% Asian; <3% other races/ethnicities Age and sex distribution: 52.6% male; 47.4% female; 25.3% 65 years and older	Diversity of volunteers: 59% White; 45% Hispanic/Latino ; 19% African American; 3% Asian ; 9% Native American Age and sex distribution: 55% male; 45% female; 34% 60 years and older
Patient Counseling	• **Injection site:** Pain, swelling, erythema at injection site, localized axillary lymphadenopathy (80%–89% of vaccinated persons*) • **Systemic:** Fever, fatigue, headache, chills, myalgia, arthralgia (55%–83% of vaccinated persons*; acetaminophen or ibuprofen may be used) • These symptoms tend to be more common after the second dose and resolve 1–3 days after vaccination • Anaphylaxis following vaccination is noted in US postmarket surveillance at a rate of 4.7 cases/million for Pfizer-BioNTech and at a rate of 2.5 cases/million for Moderna as of 1/18/21; unless contraindicated, benefit of vaccination outweighs risk of anaphylaxis; refer to CDC's guidance on Managing Anaphylaxis • Access a comprehensive summary of local reactions, systemic reactions, adverse events, and serious adverse events for the Pfizer or Moderna COVID-19 vaccines ** Depending on the vaccine, age group, and vaccine dose*		• **Injection site:** Pain, swelling, erythema • **Systemic:** Headache, fatigue, muscle ache, nausea, fever • Warn about the rare potential onset of symptoms of thrombocytopenia syndrome (TTS) 1–2 weeks after vaccination, including shortness of breath, chest pain, leg swelling, abdominal pain, persistent headache, or bruising around injection site. • Access a comprehensive summary for the Janssen COVID-19 vaccine.

Continues.

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Efficacy and Safety Information *(continued)*			

Contraindications	• Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine
	  • Persons with a contraindication to mRNA COVID-19 vaccines (including due to a known allergy to polyethylene glycol [PEG]) have a precaution to Janssen COVID-19 vaccine, and vice versa
	  • Persons with a contraindication to Janssen COVID-19 vaccine (including due to a known allergy to polysorbate) have a precaution to mRNA COVID-19 vaccines
	• Immediate (within 4 hours) allergic reaction of any severity after a previous dose or known (diagnosed) allergy to a component of the vaccine (see ingredients below)
	• Persons with contraindication to one mRNA vaccine should not receive doses of either mRNA vaccine (Pfizer-BioNTech or Moderna)
	• If screen positive for a contraindication, do not vaccinate and consider referral to allergist-immunologist		

Precautions	• Among persons without a contraindication, a history of any immediate (within 4 hours) allergic reaction to other vaccines or injectable therapies • Persons with a contraindication to mRNA COVID-19 vaccines (Pfizer-BioNTech or Moderna) have a precaution to Janssen COVID-19 vaccine, and vice versa • If screen positive for a precaution, complete a risk assessment, consider referral to allergist-immunologist, and observe for 30 minutes postvaccination		

Continues.

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Clinical Considerations			
Interchangeability of COVID-19 vaccines	COVID-19 vaccines are not interchangeable; if the first dose of an mRNA COVID-19 vaccine was received, but the patient is unable to complete the series (e.g., contraindication), then the Janssen COVID-19 vaccine may be given at a minimum interval of 28 days from mRNA dose and the patient is considered to have received a valid, single-dose Janssen vaccination, not a mixed vaccination series		
Coadministration with other vaccines	May be administered without regard to timing; it is unknown whether coadministration with other vaccines increases reactogenicity of the COVID-19 vaccine; providers should consider the benefits and risks of coadministration when deciding whether to co-administer other vaccines within 14 days of COVID-19 vaccination		
Coadministration with antipyretic/analgesic	Prophylactic administration of antipyretic or analgesic medications for the prevention of postvaccination symptoms is NOT recommended; these medications *may be used if postvaccination symptoms occur, and patient need exists*		
Persons with a history of SARS-CoV-2 infection	Vaccination should be offered regardless of prior SARS-CoV-2 infection; while vaccine supplies remain limited, persons with a history of infection may choose to delay vaccination, if desired		
Persons with a history of MIS-C or MIS-A	There is no data on the safety and efficacy of COVID-19 vaccines in people with a history of multisystem inflammatory syndrome in children (MIS-C) or in adults (MIS-A); access more information on the risks and benefits		
Persons treated with antibodies	Persons who received antibody therapy for COVID-19 should defer vaccination for 90 days		
Considerations for the Use of the Janssen COVID-19 Vaccine			
Women aged < 50 years	These persons may receive the vaccine but should be made aware of the rare risk of TTS after receipt of the Janssen COVID-19 vaccine and the availability of other FDA-authorized COVID-19 vaccines.		
Persons with a history/risk for thrombosis	Persons with a history of an episode of an immune-mediated syndrome characterized by thrombosis and thrombocytopenia, such as heparin-induced thrombocytopenia (HIT), should avoid the use of the Janssen COVID-19 vaccine; persons with a history or risk of venous thromboembolism are not believed to be more susceptible to TTS.		
Use of aspirin or anticoagulants	Persons who take these medications do not need to stop taking them prior to receiving the Janssen COVID-19 vaccine; it is not recommended to begin taking these medications prior to receiving this vaccine.		

Continues.

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Special Populations			
Immunocompromised persons	May be vaccinated; safety and efficacy data limited; counsel on the potential for a reduced immune response to the vaccine (efficacy) and the need to follow current guidance to protect themselves against COVID-19 (e.g., masks, social distancing); antiviral therapy is unlikely to impact development of a protective antibody response		
Persons with autoimmune disorder	May be vaccinated; no safety and efficacy data available, but persons with autoimmune disorders were included in clinical trials		
Pregnant/lactating women	May be vaccinated; pregnant or breastfeeding women were not included in the clinical trials; postauthorization safety monitoring of >30,000 women has not revealed a safety problem; mRNA and viral vector COVID-19 vaccines are not considered live virus vaccines and are not considered a risk to the breastfeeding infant		
Children and adolescents	Children and adolescents ages 12-17 years are eligible for vaccination; this age group may be at increased risk of syncope after any vaccine, including COVID-19	Not recommended to persons ≤18 years of age	Not recommended to persons ≤18 years of age
Other populations	Persons with a history of Guillain-Barre syndrome or Bell's palsy may be vaccinated; persons with a history of dermal filler use may experience temporary swelling at or near the site of filler injection following vaccination and should follow up with their health care provider if this occurs		

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Vaccine	Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Ingredients			
	• Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 • 2[(polyethylene glycol)*-2000]-N,N-ditetradecylacetamide • 1,2-distearoyl-sn-glycero-3-phosphocholine • Cholesterol • (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate) • Potassium chloride • Monobasic potassium phosphate • Sodium chloride • Dibasic sodium phosphate dihydrate • Sucrose	• Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 • Polyethylene glycol (PEG)* 2000 dimyristoyl glycerol (DMG) • 1,2-distearoyl-sn-glycero-3-phosphocholine • Cholesterol • SM-102 (proprietary to Moderna) • Tromethamine • Tromethamine hydrochloride • Acetic acid • Sodium acetate • Sucrose	• 5×10^{10} virus particles • Citric acid • Trisodium citrate • Ethanol • 2-hydroxypropyl-β-cyclodextrin • Polysorbate-80* • Sodium chloride

**As of March 1, 2021, mRNA COVID-19 vaccines are the only vaccines in the United States that contain PEG, though several vaccines contain polysorbate (more information can be found in CDC's vaccine excipient summary).*